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ABSTRACT

The geographic distribution of arts funding by the National Endowment for the Arts (NEA) and selected state art agencies is examined in this report. Data collected from the 1985 Survey of Public Participation in the Arts was used to determine if variations in geographic participation rates help explain differences in government support of the arts. Funding patterns for jazz, music, opera, musical plays, drama, ballet, and art museums were examined through an analysis of arts-related financial support in the 14 most populous U.S. states. Findings indicated that there was not a statistically significant relationship between arts funding and population distribution. However, there appeared to be a strong relationship between government funding and the relative distribution of arts organizations, and generally the relationship between government arts funding and the distribution of artists was positive. Data were tested using a number of selected models, and comparisons among them are provided. Fourteen tables and 28 endnotes are included, and appendices contain 3 additional tables showing: (1) dependent and independent variables for all 50 states; (2) participation rates for the 14 most populous states; and (3) subregions' composition and participation rates. (JHP)

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AN INQUIRY INTO THE GEOGRAPHIC CORRELATES OF GOVERNMENT ARTS FUNDING

A Research Monograph Based on the
1985 Survey of Public Participation in the Arts

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AN INQUIRY INTO THE GEOGRAPHIC CORRELATES OF GOVERNMENT ARTS FUNDING

by

J. Mark Davidson Schuster

The geographic distribution of arts funding has been an important, though perhaps less than dominant, element in policy debates concerning arts funding. The National Endowment for the Arts through its Office for Public Partnership acts to provide support and incentives for state and local government initiatives in arts funding. Block grants through this program served as an early impetus for the creation of State Arts Agencies in all fifty states and continue to provide annual support to them.[1] Currently, the Endowment is required to award at least 20 percent of its programs funds (including the block grants) to State and Regional Arts Agencies.[2] Moreover, it is not uncommon for the Endowment to receive inquiries from Congress asking what the Endowment is doing for rural areas as compared to urban areas, or for areas in the South as compared to areas in the Northeast or West.

The question of geographic distribution has been important at the state level as well. In 1974 the New York State Legislature required the New York State Council for the Arts to spend at least seventy-five cents per capita in each of the state's sixty-two counties, a stipulation that has stirred considerable controversy.[3] Massachusetts has created a state Arts Lottery with local Arts Lottery Councils throughout the state that are designated to distribute lottery funds to the arts on a basis more reflective of the geographic distribution of the state's population. Significantly, the Arts Lottery operates independently of the Massachusetts Council on the Arts and Humanities, the NEA-supported and state-authorized State Arts Agency.

While policy intent undoubtedly helps to explain the distribution of government funds to the arts both across states and within states, the demand for arts funding coming from within a particular jurisdiction must also be an important explanatory factor. In this monograph, I explore various measures of the demand for arts funding to test the extent to which they help explain the variation in Endowment funding across states as well as the variation in state appropriations for the arts themselves. It is uncommon for government arts agencies to step back from their day to day decisions concerning individual grants to consider the overall pattern of arts funding that those decisions generates; this monograph offers one set of lenses with which to analyze the resultant pattern.

The occasion for this monograph is the availability, for the first time, of the results of two large scale surveys documenting the participation patterns of American adults in a wide variety of artistic and allied activities: the 1982 and 1985 Surveys of Public Participation in the Arts.[4] With these data it is now possible to document participation rates in various arts activities according to a variety of geographic variables--regions, subregions, states (the fourteen most populous ones), major cities and metropolitan areas, urban/rural farm/rural non-farm, and SMSA central city/SMSA not central city/not SMSA--and it is possible to test whether variations in these participation rates help to explain differences in government support of the arts.[5] In this monograph I use participation data from the 1985 Survey of Public Participation in the Arts (SPPA '85) and focus on the distribution of government arts funding by state.

THE DEPENDENT VARIABLES: NEA FUNDING AND STATE ARTS AGENCY FUNDING BY STATE

Throughout this monograph I will focus on expenditures made by the key federal and state arts funding agencies: the National Endowment for the Arts and the State Arts Agencies. It is important to note that this seemingly straightforward analytic decision has important implications for what portions of total government expenditures on the arts are actually revealed; I have not attempted a complete accounting of all governmental expenditures on the arts by these levels of government.[6] But if these are the agencies whose funding behavior we wish to explain, this purview is justified.

For State Arts Agency expenditures I use the fiscal year 1985 appropriation to each agency by the State Legislature.[7] (These data, along with other key variables, are tabulated in Appendix A.) Appropriations totalled $161.4 million for the fifty states included in this analysis plus the District of Columbia and five American territories. These numbers are a measure of the state's commitment to its primary designated arts agency. They include any earmarked line items that are passed to specific arts institutions through the agency's budget, but they do not include earmarked appropriations that pass outside of the agency's budget.[8] Nor do they include expenditures by other major state funding conduits such as the State Arts Lottery in Massachusetts. And because they are restricted to state appropriations, they do not necessarily correspond to the amount of money actually controlled and spent by the agency; for example, neither transfers from NEA nor grants from private sources (foundations, corporations or individuals) would be included in these figures. Nevertheless, with the currently available data, these figures are the closest one can come to a measure of each state's commitment

to the arts out of general tax revenues.

The distribution of National Endowment for the Arts expenditures by state is taken from an unpublished analysis by the Office for Public Partnership of all NEA program grants made in fiscal '85 (Appendix A). The total of these grants was $145.6 million, including grants to American territories not incorporated into the current analysis, out of a total fiscal '85 appropriation of $163.7 million.[9] In attempting to explain the variation in arts funding across states, it perhaps would be useful to separate those parts of NEA funding that are discretionary from those that are mandated by law or internal procedure,[10] but because I am looking at all grants to a state, not just at grants to the state arts agencies, this refinement would pay a minor role. (In Hofferbert and Urice's study of the explanations for funding of the arts by state, on the other hand, this distinction was critical because that study focused on NEA funding of each state arts agency in order to test the relationship between this federal stimulus and the level of state arts funding.[11])

In this monograph I test a variety of models of arts funding by state. In most cases I calculate two models, one for National Endowment funding and one for state arts agency funding. To propose a single model to characterize the distribution of NEA funding by state may seem odd to those who are familiar with NEA's multilayered peer review decisionmaking. But what is of interest here is whether those many, more or less independent, decisions actually take on a predictable pattern when viewed according to a macro set of variables.

To justify a single model for state arts agency funding is even more difficult. There is no plausible guiding hand from a single agency. And even

if the state arts agencies are aware of, and react to, one another by sharing considerable amounts of funding information, appropriations to the state arts agencies are ultimately set by the various state legislatures who, arguably, are more concerned with within-state concerns than with funding levels in other states. Yet, if a macro funding pattern does exist across states its implications ought to be considered by those who are concerned with arts funding policy.

One would expect that a major factor in the variation of government expenditures across states is simply the size of those states: larger states--whether in population (more people to be served) or in area (higher costs of distributing cultural activities throughout the state)--would, ceteris paribus, be expected to have higher levels of expenditure. In formulating a model of funding decisionmaking it will be important not only to consider raw levels of support but also to normalize those levels. Therefore, throughout this monograph I report two sets of analyses, one treating raw expenditures as the dependent variable and the other treating per capita expenditures as the dependent variable. To calculate per capita expenditures I have divided by the number of adults (age 18 and over) resident in each state in 1985.[12] This calculation corresponds nicely to the SPPA surveys, which studied the arts participation of individuals age 18 or over, and it may also be justified on the more substantive grounds that arts funding decisions are liable to be more responsive to the arts participation choices of adults. (This is not to suggest, of course, that government arts agencies do not fund artistic activities that are targeted at, or involve, children.)

Later in this monograph I explore one other measure of a state's commitment to the arts: the percent of the total state budget allocated to the

state arts agency.[13] This measure identifies unusual commitments to the arts with respect to the size of the state government.[14]

THE INDEPENDENT VARIABLES: PARTICIPANTS, ORGANIZATIONS, AND ARTISTS

Government arts funding by state is undoubtedly a function of many different variables. My central concern in this analysis is to measure the extent to which funding responds to geographic-based demand for funding. The three primary independent variables measure three dimensions of demand: the geographic distribution of participants (audience members), the geographic distribution of nonprofit arts organizations, and the geographic distribution of artists.

Hypothesis$_1$: Arts funding will be responsive to the participation of the population in the arts.

If arts funding levels grow in reaction to increases in participation in the adult population, then the relationship between arts funding and participation levels will be positive. On the other hand, to the extent that arts funding policy is designed to foster participation where it is low--a "compensatory" funding policy--the sign of the relationship will be negative.

Data on participation levels are taken from SPPA '85. Respondents were asked about whether or not they had attended seven core artistic activities in the preceding twelve months: a live jazz performance, a live classical music performance, a live opera, a live musical stage play or operetta, a non-musical stage play, a live ballet performance, and an art gallery or art museum.

Although these data were collected for individuals, researchers using the SPPA datatapes are unable to study individual responses by state because the Bureau of Census masked most of the geographic variables to protect individual confidentiality. Instead, the Bureau prepared a set of predetermined geographic cross-tabulations for the National Endowment for the Arts, and only those geographic analyses are available for secondary data analysis.[15] Moreover, these results are only available for the states in which the samples were sufficiently large to give reliable results. The upshot is that in analyzing participation rates by state, the available data are the participation rates--the percentage of the adult population that participated in the previous year--in each of the seven core activities for the fourteen most populous states (Appendix B).

For each of the fourteen states I have calculated an aggregate participation index that is the sum of the participation rates for the seven core activities. (This index is the same one that has been used by other researchers in analyzing the SPPA data.[16]) In effect, this index counts how many of the seven core activities each individual in the state participated in during the previous year, adds those numbers across all adults in the state, divides by the number of adults, and, finally, multiplies by 100. Thus, the index could range from 0 to 700, the latter number indicating that all adults in the state participated in all seven activities (100 percent x 7 activities = 700). For the 14 states for which the participation rates are available, the participation index has a mean of 79.8, indicating that the "number of participations," on average, was equal to 79.8 percent of the adult population.[17] (The standard deviation is 17.1, and the range is from a low of 57.9 in Georgia to a high of 107.2 in Massachusetts.)

In the analyses that follow the emphasis will be on how much per capita funding tends to increase (or decrease) with an increase of one in the participation index; the relationship is measured by the regression coefficient of the participation index.

In those analyses where the dependent variable is raw expenditures rather than per capita expenditures, it is more appropriate to use the number of "participations" as the independent variable. The number of participations is calculated by dividing the participation index by 100 and then multiplying by the adult population of each state. In an attempt to simplify the presentation of this variable, I have chosen to express the result of this calculation in thousands of participations, so the regression coefficients are to be interpreted as the change in dollars in funding with an increase of 1,000 in the number of participations.

Hypothesis$_2$: Arts funding will be responsive to the number (and, therefore, the distribution) of arts organizations.

The greater the number of potential funding clients, the greater will be the demand for government arts funding. If government arts funding agencies are sensitive to this type of demand, one would expect higher levels of funding for those states with more arts organizations.

Existing data on the geographic distribution of arts organizations are surprisingly weak.[18] In order to estimate the distribution of arts organizations I have used a rough procedure. I have limited my attention to private, nonprofit performing arts organizations and art museums. These restrictions leave out agencies of lower levels of government, service organizations, and, possibly, arts organizations that are components of

universities, all of which are potential clients of government arts agencies. They also leave out profitmaking arts institutions, though for the most part government arts funding agencies have not yet extended their funding to these institutions.

I estimated the distribution of art museums and art galleries using the American Association of Museum's Official Museum Directory for 1985, including any museum for which an argument could be made that it was an art museum, irrespective of whether or not it had been accredited by AAM.[19] In this manner, I identified a total of 1,275 art museums in the fifty states plus the District of Columbia. For the distribution of nonprofit performing arts organizations I relied on research by the Research Division of NEA based on data contained in the 1982 Census of Service Industries.[20] This study identified 1,610 nonprofit performing arts organizations. Both of these numbers are almost certainly underestimates of the true number or museums and organizations in the United States, but if the underestimation does not contain any strong geographic bias, using these numbers to study their relationship to public funding will not be overly problematic.

For each state I add the number of performing arts organizations and the number of museums together to form a measure of the institutional demand for government arts funding. The mean number of organizations per state for all 50 states was 56.9, but it was 123.6 for the fourteen states for which we have participation rates, reflecting the fact that two states in the fourteen had extremely high numbers of arts organizations: 367 in New York and 305 in Massachusetts. For the regression analyses based on per capita funding figures, I use the number of arts organizations per 100,000 population as the independent variable; the corresponding regression coefficients therefore

measure the funding increase in dollars per capita for every additional organization per 100,000 adults.

Hypothesis$_3$: Arts funding will be responsive to the number (and, therefore, the distribution) of artists.

One of the most often expressed criticisms of federal arts funding is the high level of funding to certain states, particularly New York. The response of the funding agencies has typically been: not only is that where a large proportion of the arts organizations are located, it is where there is a disproportionate concentration of artists unaffiliated with any particular arts organization. One might expect that the larger the number of individual artists who might make claims on arts funding the higher the level of public funding.

Data on the geographic distribution of artists are taken from Where Artists Live 1980 based on the 1980 U.S. Census.[21] This report tabulates artists in eleven different categories: actors and directors; announcers; architects; authors; dancers; designers; musicians and composers; painters, sculptors, craft artists, and artist printmakers; photographers; teachers of art, drama, and music (higher education); and artists not elsewhere classified. These categories clearly indicate the biggest problem with these data, the inability to separate those artists who are employed in the profitmaking sector (and, therefore, unlikely to be eligible for government support) from those who are self-employed are employed in the nonprofit sector. It is not simply a matter of eliminating one or more of these categories from the analysis because all of the categories include this mix of individuals, though in varying proportions. Moreover, many artists,

particularly those in the performing arts, move freely back and forth between the nonprofit and profitmaking sectors. I have simply used the sum of these categories by state as an estimate of the demand for government arts funding expressed by artists. According to these data there were 1.09 million artists in the United States in 1980 including the District of Columbia. The mean number of artists was 21,589 per state; for the fourteen most populous states the mean was 53,370.

In the regressions that follow I measure this variable in thousands of artists, so the regression coefficient should be read as the increase in funding for every increase of 1,000 artists. In the per capita funding analyses I use the number of artists per 1,000 adults as the independent variable.

Two other independent variables are introduced later in the monograph. The age of the state arts agency may be an important indicator of the maturity and growth of the agency; the older the agency the higher funding is expected to be. And, in all of the arts participation studies that have been done using the SPPA data as well as in many earlier attendance studies, educational level has turned out to be an important predictor variable. In order to test whether education might have an independent effect on arts funding, the median number of years of schooling by state is included in some analyses.

ANALYZING THE LINK BETWEEN DEMAND AND FUNDING

As a first step in understanding the link between geographic demand and funding in the fourteen states for which we have complete data, consider the correlation matrices summarizing the relationship between absolute funding levels and the three demand variables (Table 1) and per capita funding levels and the three demand variables (Table 2).

Looking first at raw expenditure levels (Table 1), one would expect a priori that the correlation coefficients would be higher when measured with respect to the raw (unnormalized) demand variables. The absolute level of funding would respond to the absolute level of demand. This is true for participation and organizations but, surprisingly, it is not true for artists; raw funding levels are more responsive to the number of artists per capita than to the number of artists. The correlation coefficients for NEA funding are generally higher than those for state funding, indicating that NEA is more responsive to these demands than are the state arts agencies. This is not surprising given that NEA is a single agency with greater opportunity to coordinate its funding decisions internally.

Calculating the dependent funding variables per capita (Table 2) flips the correlations. As might be expected, the demand variables per capita are much more highly correlated with per capita funding for all three demand variables than the raw demand variables. The relative level of funding responds to the relative level of demand. Again, NEA funding is more responsive to these demand variables than state funding.

Table 1: Correlation Matrices--Funding Levels With Demand Variables

	Number of Arts Organizations	Number of Participations	Number of Artists
State Appropriations	+.82	+.44	+.63
NEA Expenditures	+.92	+.61	+.77
	Organizations Per 100,000 Population	Participation Index	Artists Per 1,000 Population
State Appropriations	+.76	+.24	+.84
NEA Expenditures	+.73	+.31	+.87

Note: Correlation coefficients are for the fourteen most populous states.

Table 2: Correlation Matrices--Funding Levels Per Capita With Demand Variables

	Number of Arts Organizations	Number of Participations	Number of Artists
State Appropriations Per Capita	+.45	+.08	+.24
NEA Expenditures Per Capita	+.71	+.33	+.49
	Organizations Per 100,000 Population	Participation Index	Artists Per 1,000 Population
State Appropriations Per Capita	+.82	+.32	+.64
NEA Expenditures Per Capita	+.91	+.37	+.77

Note: Correlation coefficients are for the fourteen most populous states.

These calculations suggest that in modelling absolute funding levels the absolute values of the demand variables should be used and in modelling per capita funding levels the relative values should be used.

To what extent are the three independent variables I have proposed measuring the same dimension of demand? If they are highly correlated with one another, they are not independent measures of demand, and it becomes impossible to distinguish between the individual mathematical contributions of each variable compromising any attempt to identify which is the critical predictor/determinant of arts funding. Table 3 reports the correlation matrices for each set of independent variables.

Table 3: Correlation Matrices--The Independent Variables Measuring Demand

	Number of Arts Organizations	Number of Participations	Number of Artists
Number of Arts Organizations	+1.00	+.83	+.93
Number of Participants		+1.00	+.96
Number of Artists			+1.00

	Organizations Per 100,000 Population	Participation Index	Artists Per 1,000 Population
Organizations Per 100,000 Population	+1.00	+.33	+.61
Participation Index		+1.00	+.55
Artists Per 1,000 Population			+1.00

Note: Correlation coefficients are for the fourteen most populous states.

Among the absolute demand variables there is very high multicollinearity, while the correlation coefficients are more reasonable among the relative demand variables. This suggests that per capita models will be more reliable for purposes of statistical hypothesis testing.

BIVARIATE MODELS

Tables 4 and 5 report the regression results treating each of the demand variables separately for per capita funding and for absolute funding levels respectively. Because multicollinearity is not a problem in bivariate models, both sets are of interest, and there are a number of results worth noticing in these tables.

The best bivariate models are those that focus on the geographic distribution of organizations. Government arts funding, whether it is measured in per capita terms or in absolute terms, is more responsive to the demand exerted by the presence of arts organizations than it is to the demand exerted by artists or to the demand implicit in the participation of the population. The R^2 statistics for the organization models, ranging from .67 to .85, are quite high.

The signs for the artist and organization variables are all positive, as expected, and they are all highly statistically significant. On the other hand, the participation variables are not particularly significant. The signs are positive--funding is directly related to participation in these models--but participation by itself is a poor predictor of arts funding (R^2 from .11 to .37).

Table 4: Regression Models--Bivariate Analysis of Per Capita Funding

Independent Variable: Participation Index		R^2
State Expenditures Per Capita	= - $.33 + ($.017 x Participation Index)	.11
NEA Expenditures Per Capita	= - $.51 + ($.015 x Participation Index)	.14

Independent Variable: Organizations Per 100,000 Population		
State Expenditures Per Capita	= - $.99 + ($1.34 x ** Organizations Per 100,000 Population)	.68
NEA Expenditures Per Capita	= - $1.03 + ($1.16 x ** Organizations Per 100,000 Population)	.82

Independent Variable: Artists Per 1,000 Population		
State Expenditures Per Capita	= - $.96 + ($.33 x ** Artists Per 1,000 Population)	.41
NEA Expenditures Per Capita	= - $1.16 + ($.31 x ** Artists Per 1,000 Population)	.59

Notes: All regressions are for the fourteen most populous states.

** Coefficient significant at the .01 level.

Table 5: Regression Models--Bivariate Analysis of Absolute Funding Levels

		R^2
Independent Variable: Participations (1,000s)		
State Expenditures	= $2,421,460 + ($891 x Participations)	.19
NEA Expenditures	= - $1,501,766 + ($1,208 x Participations) *	.37
Independent Variable: Organizations		
State Expenditures	= - $1,815,921 + ($81,867 x Organizations) **	.67
NEA Expenditures	= - $4,583,520 + ($89,424 x Organizations) **	.85
Independent Variable: Artists (1,000s)		
State Expenditures	= $1,349,920 + ($130,344 x Artists) **	.40
NEA Expenditures	= - $1,752,029 + ($154,118 x Artists) **	.60

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

Except for the model that measures the absolute level of Endowment funding as a function of participation, which is better than the corresponding per capita model, the per capita models and the absolute funding level models are roughly equal in their explanatory ability.

Comparing the regression coefficients for the state expenditure models to the corresponding coefficients for the Endowment expenditure models, one sees that marginal increments in state funding related to each variable are not dramatically different from marginal increments in Endowment funding, suggesting that even though the bases from which these marginal decisions are made are set differently, both levels of government react similarly, on average, to increases in these demand variables. Yet, in the absolute models the marginal Endowment contribution is always greater than the state's contribution, while in the per capita models this pattern is reversed. Notice, also, that the Endowment model is always better than the accompanying state model, indicating that the funding decisions of one central agency are better described by these models than are the funding levels of the fourteen state agencies considered here.

MULTIVARIATE MODELS--THE THREE DEMAND VARIABLES

What happens when the three demand variables are included simultaneously in a regression model? Table 6 summarizes four multivariate regression models, a per capita model and an absolute funding model for each level of government. All of these models have very high R^2 statistics, but they are only moderately better than the best of the bivariate models (the "organization" models). As expected, the signs for the organization and

Table 6: Multivariate Regression Models—Per Capita and Absolute Levels of Funding with All Three Demand Variables

Per Capita Funding Models

Independent Variables: Participation Index, Organizations Per 100,000 Population, Artists Per 1,000 Population

		R^2
State Expenditures Per Capita	= - $1.27 + (- $.002 x Participation Index) + ($1.12 x Organizations Per 100,000 Population) ** + ($1.23 x Artists Per 1,000 Population)	.71
NEA Expenditures Per Capita	= - $1.34 + (- $.003 x Participation Index) + ($.89 x Organizations Per 100,000 Population) ** + ($.15 x Artists Per 1,000 Population) *	.90

Absolute Funding Models

Independent Variables: Participations (1,000s), Organizations, Artists (1,000s)

State Expenditures	= $2,578,966 + (-$2,513 x Participations) * + ($111,680 x Organizations) * + ($159,432 x Artists)	.86
NEA Expenditures	= -$2,424,955 + (-$1,280 x Participations) + ($117,433 x Organizations) ** + ($53,053 x Artists)	.92

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

artist variables are all positive, indicating that arts funding increases with increases in these variables.

On the other hand, the signs for both forms of the participation variable are negative, indicating that once the relative distributions of organizations and artists have been controlled for, arts funding is inversely related to participation: ceteris paribus, in states where participation is lower, funding is higher. It is important to note that this cross-sectional result does not necessarily justify a time-series conclusion: e.g. that decreases in participation would lead to compensating increases in funding within a state or vice versa. Moreover, the regression coefficients for the participation variables are, with one exception, not statistically significant, so there is considerable uncertainty as to the actual direction of the sign. Overall, participation is still not nearly as important as the other two demand variables. (Even though both organizations and participations turn out to be statistically significant in the state absolute funding model, these results should be treated with caution because of the problem of multicollinearity.)

Once again, the Endowment models are better predictive models than the state models.

The multivariate absolute funding models are of further interest because their regression coefficients can be used to calculate the implicit tradeoffs made by funding agencies. For example, in the state model every increment of 1,000 artists results in a funding increase of $159,432, and each additional arts organization results in a funding increase of $111,680. Therefore, the tradeoff is: one organization = 700 artists ($111,680 ÷ $159,432 x 1,000 = 700). Similarly, for NEA the implicit tradeoff is: one organization = 2,214 artists ($117,433 ÷ $53,053 x 1,000 = 2,214).

MULTIVARIATE MODELS--ADDITIONAL INDEPENDENT VARIABLES

Much research on arts participation has focused on education level as the most important predictor of attendance,[22] but this variable has not been tested with respect to its relationship to arts funding levels. Do states that have a more highly educated population provide higher funding levels to the arts? Table 7 summarizes the regression models that result when the median education level of each state is added to the multivariate models.[23]

The introduction of education as an independent variable improves the state regressions but not the NEA regressions. In all of the models the signs for the organization and artist variables are all positive. The signs of the participation variables, with one exception (the coefficient of the participation index in the NEA per capita model is barely positive), are negative.

Perhaps the most interesting model in this set is the state level absolute funding model. This model has the highest R^2 of any of the state models tested in this monograph. Moreover, participations are a highly statistically significant predictor of state expenditure for the first time, despite the existence of multicollinearity. Education does seem to play a role separate from the demand variables at the state level. It has a statistically significant relationship with absolute state funding, but it is not statistically significant in the NEA model.

Table 7: Multivariate Regression Models--Per Capita and Absolute Levels of Funding with Three Demand Variables Plus Education Level

Per Capita Funding Models	R^2
Independent Variables: Participation Index, Organizations Per 100,000 Population, Artists Per 1,000 Population, Median Education Level	
State Expenditures Per Capita = - \$29.85 + (-\$.009 x Participation Index) + (\$1.29 x Organizations Per 100,000 Population **) + (\$.005 x Artists Per 1,000 Population) + (\$2.38 x Median Education Level)	.76
NEA Expenditures Per Capita = - \$13.33 + (\$.001 x Participation Index) + (\$.80 x Organizations Per 100,000 Population **) + (\$.22 x Artists Per 1,000 Population **) + (-\$1.22 x Median Education Level)	.92

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

Table 7: Multivariate Regression Models--Per Capita and Absolute Levels of Funding with Three Demand Variables Plus Education Level (continued)

Absolute Funding Models	R^2
Independent Variables: Participations (1,000s), Organizations, Artists (1,000s), Median Education Level	
State Expenditures = -$291,027,877 + (-$2,921 x Participations)** + ($121,590 x Organizations)** + ($137,216 x Artists) + ($23,809,559 x Median Education Level)*	.93
NEA Expenditures = - $26,172,579 + (-$1,313 x Participations) + ($118,234 x Organizations)** + ($51,256 x Artists) + ($1,925,774 x Median Education Level)	.92

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

Previous research has pointed to the age of the state arts agency as another possible variable to help explain the level of state arts funding.[24] The results of introducing age into the four models are summarized in Table 8.

Overall, the introduction of the age of the state arts agency as an independent variable does not improve the quality of the regression models over those discussed above. But, the interesting question is how the funding agencies react to the age of the agency. A reasonable hypothesis might be that the older the arts agency the higher the level of arts funding because of the increased time it has had to establish its legitimacy and to improve its lobbying of the state legislature. But, in both forms of the model state funding turns out to be inversely related to the age of the state arts agency while federal funding is positively related to it, though none of these coefficients is statistically significant. This finding contradicts earlier research on the relationship between agency age and state arts funding.[25] Again, it would be a mistake to jump from these cross-sectional results to a time-series conclusion, but the results are surprising nonetheless.

Table 8: Multivariate Regression Models--Per Capita and Absolute Levels of Funding with Three Demand Variables Plus Age of State Arts Agency

Per Capita Funding Models	R^2
Independent Variables: Participation Index, Organizations Per 100,000 Population, Artists Per 1,000 Population, Age	
State Expenditures Per Capita = $1.87 + (-$.010 x Participation Index) + ($1.24 x Organizations Per 100,000 Population **) + ($.26 x Artists Per 1,000 Population *) + (-$.17 x Age)	.78
NEA Expenditures Per Capita = - $1.91 + (-$.001 x Participation Index) + ($.87 x Organizations Per 100,000 Population **) + ($.13 x Artists Per 1,000 Population) + ($.03 x Age)	.90

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

Table 8: Multivariate Regression Models--Per Capita and Absolute Levels of Funding with Three Demand Variables Plus Age of State Arts Agency (continued)

Absolute Funding Models	R^2

Independent Variables: Participations (1,000s), Organizations, Artists (1,000s), Age

State
Expenditures = $9,103,902 + (-$2,638 x Participations)* + ($115,626 x Organizations)* + ($173,225 x Artists)
+ (-$342,376 x Age) .87

NEA
Expenditures = - $11,872,054 + (-$1,099 x Participations)* + ($111,720 x Organizations)** + ($33,083 x Artists)
+ ($495,708 x Age) .93

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

AN ALTERNATIVE DEPENDENT VARIABLE

As mentioned earlier, an alternative indicator of a state's commitment to arts funding is to measure its relative effort through the percent of total state expenditures allocated to the state arts agency. These data are collected on an annual basis by the National Assembly of State Arts Agencies.[26] For all 50 states the mean percentage allocated to the arts is .07%, for the 14 most populous states it is somewhat higher, .10%. For the fourteen states, the state percentage is most highly correlated with organizations per 100,000 adults ($r = .66$); the correlation with the age of the state arts agency, on the other hand, is surprisingly low ($r = .09$). (For all states, the age/budget percentage correlation is .22.[27])

Table 9 summarizes the three bivariate regressions and the multivariate regression with the highest R^2. Looking at the R^2 statistics, it is clear that these models are not as good at explaining variations in funding levels by state as many of the models explored above. It is not too difficult to argue that state legislatures are much less likely to consider state budget percentages than they are to consider absolute funding levels or per capita funding levels in determining appropriations for the state arts agency. Among these fourteen states, the budget percentage actually decreases an average of .018% for each year older the state arts agency is, indicating that there is not a maturation of arts funding over time as measured by this indicator.

Table 9: Regression Models--Analysis of State Budget Percentage

Bivariate Regressions	R^2
State Budget Percentage Spent on Arts = - .022 + (.001 x Participation Index)	.06
State Budget Percentage Spent on Arts = - .020 + (.080 ** x Organizations Per 100,000 Population)	.44
State Budget Percentage Spent on Arts = - .007 + (.018 * x Artists Per 1,000 Population)	.22

Multivariate Regression

State Budget Percentage Spent on Arts =

.306 + (-.001 x Participation Index)

+ (.086 ** x Organizations Per 100,000 Population)

+ (.018 x Artists Per 1,000 Population)

+ (-.018 x Age) .58

Notes: All regressions are for the fourteen most populous states.

* Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

DISAGGREGATING PARTICIPATION

Up to this point in the analysis, public participation in the arts has not proven to be an important predictor of government funding levels by state. Perhaps this is because the measures of participation aggregate public participation over seven different types of arts activities but government arts funding only reacts to certain of these components. Does disaggregating participation into its component parts improve ones ability to model the variation in arts funding across states?

The participation rates for each of the seven core art activities for each of the fourteen states for which these data are available are summarized in Appendix B. As in the analyses above, one should use these participation rates directly when comparing them to per capita expenditures or should transform them into "participations" for each activity by multiplying them by the adult population in each state when comparing them to absolute levels.

Table 10 reports the correlation matrices for a per capita analysis and an absolute funding level analysis. Looking first at the per capita analysis, the correlations with jazz participation are negative, indicating that higher jazz participation rates occur in states where government arts funding is lower! For all of the other arts activities the correlation coefficients are positive. If jazz is at the most populist end of a populist-to-elitist scale, or at the amateur end of an amateur-to-professional scale, of arts activities, then the signs of the correlation coefficients indicate that government arts funding is related more to the elitist or professional ends of these spectrums. If the correlation coefficients are interpreted as a measure of government responsiveness to the individual activities, the individual states

Table 10: Correlation Matrices--Measures of Participation in Individual Arts Activities With Measures of Funding Levels

Measure of Participation: Participation Rates for Each Activity

Measure of Funding Level: Funding Per Capita

	Jazz	Classical Music	Opera	Musical Play	Drama	Ballet	Museum
State Appropriations Per Capita	-.12	+.25	+.54	+.39	+.54	+.46	+.07
NEA Expenditures Per Capita	-.01	+.29	+.55	+.37	+.45	+.47	+.18

Measure of Participation: Participations (Rate for Activity x Population)

Measure of Funding Level: Absolute Level of Funding

	Jazz	Classical Music	Opera	Musical Play	Drama	Ballet	Museum
State Appropriations	+.32	+.40	+.72	+.51	+.51	+.48	+.34
NEA Expenditures	+.50	+.58	+.84	+.66	+.66	+.67	+.52

Note: Correlation coefficients are for the fourteen most populous states.

and NEA are roughly equally responsive to each area except that NEA is much more responsive to attendance at museums.

Across arts activities, what is most interesting is that per capita funding is most highly correlated with participation rates for opera, serious drama, and ballet. Yet, these three activities, along with jazz, have the four lowest overall participation rates. Taken together these two observations suggest that government funding is most responsive to participation in minority--in the sense of having a limited, specialized audience--art forms.

Looking next at the absolute funding level analysis, the correlation coefficients are all much higher. Participations by state are positively correlated with state and NEA absolute funding levels for all seven arts activities, and, once again, the correlations for NEA are higher than those for the states. The correlations are again highest for opera, ballet, and serious drama, with musical plays also joining this group.

This complete disaggregation, then, suggests a reaggregation: an index including the three "elite" art forms: opera + serious drama + ballet. I have adopted the shorthand of "elite index" in the analysis that follows. Out of curiosity, I also created another alternative index, aggregating the art forms to which most people might expect government arts funding to respond: classical music + musical play + drama + museums. This index I have called the "keyfour" index.

The correlation matrices in Table 11 indicate that measures of participation that aggregate the three elite art forms are better predictors of funding than are overall measures of participation. The "keyfour" measures are slightly less useful than the overall measures.

Table 11: Correlation Matrices--Alternative Aggregate Participation Measures With Measures of Funding Levels

Measure of Funding Level: Funding Per Capita

	Overall Index	Elite Index	Keyfour Index
State Appropriations Per Capita	+.32	+.59	+.32
NEA Expenditures Per Capita	+.37	+.54	+.35

Measure of Funding Level: Absolute Level of Funding

	Overall Participations	Elite Participations	Keyfour Participations
State Appropriations	+.44	+.56	+.43
NEA Expenditures	+.61	+.71	+.60

Note: Correlation coefficients are for the fourteen most populous states.

Thus, using the elite measure instead of the overall measure of participation in the bivariate models would increase their predictive ability, but would the same thing happen in the multivariate models? In a variety of models, unreported here, I substituted the elite measure. Generally, the R^2 statistic stayed the same or decreased slightly, indicating that, in the presence of the other demand variables plus education or age, whether one measures participation according to all seven activities or according to the three elite activities makes little difference. Though I have by no means tested all possible disaggregations of the participation index, it appears that disaggregation does not improve the predictive ability of the models.

HOW REPRESENTATIVE ARE THE FOURTEEN STATES?

If the fourteen most populous states on which all of the foregoing analysis is based are not representative of the fifty states, much of the discussion, particularly of statistical significance, may be misleading. One has to be very careful in extrapolating from the experience of these fourteen states to the (presumed) experience of all fifty.

In particular, for the analysis of statistical significance to make sense one has to make the implicit assumption that these states are a simple random sample of all states. Given that they are the fourteen most populous states, this assumption is clearly not true. Yet, further analysis indicates that these fourteen are not terribly unrepresentative.

Sorting the states in a variety of ways gives an indication of the dimensions along which these states are unrepresentative and the dimensions along which it might be argued they are more representative:

> These 14 states are the 14 largest in population.
>
> Of these 14 states, 11 of them are among the 14 states with the highest state appropriations for the arts.
>
> Of these 14 states, 9 of them are among the 14 states that receive the highest NEA expenditures.

Looking at per capita expenditures, however, the picture is not so skewed:

> Of these 14 states, 5 of them are among the 14 states with the highest state arts agency appropriation per capita (Massachusetts [2nd], New York [3rd], Michigan [6th], New Jersey [9th], and Florida [10th]).
>
> Of these 14 states, only 2 of them are among the 14 states with the highest NEA expenditure per capita (New York [1st] and Massachusetts [4th]).

And, when looking at the two demand variables that have been key so far in this analysis:

> Of these 14 states, only 2 of them are among the 14 states with the highest number of organizations per 100,000 adults (New York [9th] and Massachusetts [11th]).
>
> Of these 14 states, only 4 of them are among the 14 states with the highest number of artists per 1,000 adults (New York [1st], California [3rd], Massachusetts [6th], and New Jersey [11th]).

One possible conclusion from these findings is that one could justify eliminating New York and Massachusetts from the fourteen state analyses as outliers. They have high values for many of the variables with which we are concerned, but, when they are viewed in the context of all fifty states, they are joined by other states not included in the fourteen. So, ultimately, it is difficult to treat them as outliers.

Even though participation rates are only available for the fourteen states, the other variables are available for all fifty states. What happens to our results when they are calculated for all fifty states?

Table 12 compares the key correlation coefficients for the fourteen states to those for the fifty states. When looking at absolute funding levels and measures of the absolute level of demand, the correlations for all the states are generally stronger than those for the fourteen states. But, looking at per capita funding and per capita measures of demand, the correlations are considerably lower when all states are taken into account than when only the fourteen are taken into account. This suggests that if it were possible to model across all fifty states it might be preferable to use absolute funding level models. This, however, would exacerbate the problem of multicollinearity; for all fifty states the correlation between number of organizations and number of artists is extremely high: $r = +.96$. Once again,

the correlation between organizations per 100,000 population and artists per 1,000 population indicates that multicollinearity would not be a problem in per capita models. Surprisingly, this correlation coefficient turns out to be negative: $r = -.18$.

Table 12: Correlation Matrices--Funding Levels With Demand Variables: Comparing the Fourteen Most Populous States to All Fifty States

	Number of Arts Organizations		Number of Artists	
	14 States	50 States	14 States	50 States
State Appropriations	+.82	+.85	+.63	+.75
NEA Expenditures	+.92	+.91	+.77	+.82

	Organizations Per 100,000 Population		Artists Per 1,000 Population	
	14 States	50 States	14 States	50 States
State Appropriations Per Capita	+.82	+.26	+.64	+.17
NEA Expenditures Per Capita	+.91	+.64	+.77	+.49

Table 13 reports a selection of regression models of arts funding for all fifty states. For the per capita models, the NEA model is always far better than the state model, reflecting the presence of a single agency that is in a better position to manage its decisionmaking than fifty independent state legislatures. With the exception of education level in the NEA per capita model, all of the signs of the independent variables are positive.

As measured by R^2, the absolute funding level models are much better than the per capita models. (Adding education or age to the absolute funding level model increases R^2 only very slightly.) Interestingly, the sign of the organization variable is positive and the sign of the artist variable is negative for both levels of government. Realizing that these regressions include all fifty states, these are very strong results showing that government funding is directly related to the presence of organizations and inversely related to the presence of artists. This is not to say that this is an explicit decision made by the funding agencies. Rather, it is a pattern that is implicit in their choices.

Table 13: Multivariate Regression Models For All Fifty States

Per Capita Funding Models	R^2
Independent Variables: Organizations Per 100,000 Population, Artists Per 1,000 Population	
State Expenditures Per Capita = - $1.09 + ($.51 * x Organizations Per 100,000 Population) + ($.19 x Artists Per 1,000 Population)	.09
NEA Expenditures Per Capita = - $.67 + ($.33 ** x Organizations Per 100,000 Population) + ($.15 ** x Artists Per 1,000 Population)	.58
Independent Variables: Organizations Per 100,000 Population, Artists Per 1,000 Population, Median Education Level	
State Expenditures Per Capita = -$22.44 + ($.39 x Organizations Per 100,000 Population) + ($.08 x Artists Per 1,000 Population) + ($1.78 x Median Education Level)	.10
NEA Expenditures Per Capita = $1.67 + ($.34 ** x Organizations Per 100,000 Population) + ($.16 ** x Artists Per 1,000 Population) + (-$.19 x Median Education Level)	.59

Notes: * Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

*** Utah deleted from regression because its age is an outlier.

Table 13: Multivariate Regression Models For All Fifty States (continued)

Per Capita Funding Models (continued) R^2

Independent Variables: Organizations Per 100,000 Population, Artists Per 1,000 Population, Age of State Arts Agency***

State Expenditures Per Capita = - $1.22 + ($.51 * x Organizations Per 100,000 Population) + ($.19 x Artists Per 1,000 Population) + ($.01 x Age) — .09

NEA Expenditures Per Capita = - $1.47 + ($.33 ** x Organizations Per 100,000 Population) + ($.12 ** x Artists Per 1,000 Population) + ($.05 * x Age) — .61

Absolute Funding Models

Independent Variables: Organizations, Artists (1,000s)

State Expenditures = - $1,923,062 + ($142,259 ** x Organizations) + (-$143,073 ** x Artists) — .78

NEA Expenditures = - $1,924,248 + ($119,016 ** x Organizations) + (- $99,241 ** x Artists) — .85

Notes: * Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

DEMAND FOR ARTS FUNDING BY SUBREGIONS

Previous research has suggested that to study the supply of the arts from the viewpoint of state boundaries may be misleading, arguing instead that metropolitan agglomerations are the appropriate geographic unit of analysis.[28] When viewed from an arts funding perspective, however, a metropolitan agglomeration is not necessarily the best unit around which to draw the assumed funding boundary.

It may be interesting to ask, instead, what happens at the subregional level? Do the accumulated funding decisions of government arts funding agencies react to demand at a subregional level more than at a statewide level? Admittedly, it is considerably more difficult to image funding decisions being made in this way than by state. How reasonable is the implicit assumption that states will band together to respond to demand subregionally? Perhaps, then, subregional regressions are of greater interest with respect to Endowment funding than with respect to state funding.

Although the Bureau of the Census has not made participation data available for all states, its tabulations do include complete participation information for the nine subregions of the United States. (See Appendix C for the composition of the subregions and their participation rates.)

Table 14 summarizes the four basic subregional regression models. The per capita models are not as good as the state models presented above; the absolute funding models are about the same (in terms of R^2). For all four models the coefficient of participation is negative, though in only one case is it statistically significant (NEA absolute funding). Once again, the presence of arts organizations is the dominant explanatory variable.

Table 14: Subregional Multivariate Regression Models--Per Capita and Absolute Levels of Funding with All Three Demand Variables

	R^2
Per Capita Funding Models	
Independent Variables: Participation Index, Organizations Per 100,000 Population, Artists Per 1,000 Population	
Regional Expenditures by States Per Capita = - $.71 + (- $.006 x Participation Index) + ($.57 x Organizations Per 100,000 Population) + ($.17 x Artists Per 1,000 Population)	.59
Regional Expenditures by NEA Per Capita = - $.61 + (- $.002 x Participation Index) + ($.52 x * Organizations Per 100,000 Population) + ($.11 x Artists Per 1,000 Population)	.76
Absolute Funding Models	
Independent Variables: Participations (1,000s), Organizations, Artists (1,000s)	
Regional Expenditures by States = -$12,090,207 + (-$1,581 x Participations) * + ($133,456 x Organizations) ** + ($91,269 x Artists)	.94
Regional Expenditures by NEA = - $4,359,477 + (-$1,571 x Participations) * + ($87,040 x Organizations) * + ($138,811 x Artists)	.91

Notes: * Coefficient significant at the .05 level.

** Coefficient significant at the .01 level.

SUMMARY

What conclusions can be drawn from foregoing analyses of government arts funding? Let me return, first, to the three hypotheses with which I began this inquiry:

Hypothesis$_1$: Arts funding will be responsive to the participation of the population in the arts.

At the outset I was unclear as to the likely relationship between arts participation and government funding levels. A funding agency might respond to the demand inherent in higher participation levels through increased funding, or it might choose to compensate for low participation levels through higher funding to encourage increased artistic activity.

Given the possibility of two very different funding responses to participation levels, it is not surprising that the results of the various analyses have turned out so ambiguously with respect to participation. In some of the proposed models the sign of participation was positive, in some it was negative, but rarely was it statistically significant. In the presence of other stronger influences that place demands on arts funding, participation seems to play only a modest role.

Hypothesis$_2$: Arts funding will be responsive to the number (and, therefore, the distribution) of arts organizations.

The presence of arts organizations, whether measured in absolute numbers or in density of organizations, has turned out to be the single most important predictive variable. By itself it explains 67% to 85% of the variation in arts funding by state depending on the specific model (Tables 4 and 5). None

of the other variables tested here comes close in explanatory ability.

Moreover, the various specifications of the organization variable are highly statistically significant in nearly all of the models, an extremely robust result. Thus, government funding for the arts does respond directly to the relative distribution of arts organizations. This result is not surprising given the emphasis of NEA and the state arts agencies on institutional support; what is surprising, perhaps, is the strength of the relationship.

Hypothesis$_3$: Arts funding will be responsive to the number (and, therefore, the distribution) of artists.

Generally, the relationship between government arts funding and the distribution of artists is positive, and in a number of the specified models that relationship is highly statistically significant. This relationship is not as robust across the various alternative models, however, as the relationship between organizations and arts funding.

All in all, despite some nuances in interpretation, the three demand variables explain a surprisingly high proportion of the variation in arts funding, particularly in the fourteen most populous states on which the bulk of this analysis focused.

Beyond the evidence concerning these three base hypotheses, the models lead to several other interesting results. Most of the proposed models do a better job at predicting NEA expenditures by state than they do at predicting the variation of state arts agency appropriations across states. Again, this is not terribly surprising; it is much easier to imagine an invisible guiding hand being exerted within one agency than across fourteen (or fifty).

When the models are extended to all fifty states, rather than the most populous fourteen for which participation data are available, the predictive ability of the models falls off dramatically, except for the absolute funding models, which still have high R^2 statistics of .78 for state arts agency appropriations and .85 for NEA expenditures.

On the other hand, some variations on the basic models make only a modest contribution to predictability. Using the percentage of the state budget appropriated to the arts as the dependent variable led to models less able to predict variations in funding. Introducing median education level or age of the state arts agency improved the predictive ability of the models only modestly. Disaggregating participation into its component parts led to interesting bivariate correlations--funding was more highly correlated with participation in each of the "elite" art forms than with participation in the high-participation art forms--but when these components and various sub-indices were introduced into the multivariate models the predictive ability of these models was only slightly improved.

NOTES

1. For a critical discussion of how well these early incentives worked see Dick Netzer, The Subsidized Muse: Public Support for the Arts in the United States (New York: Cambridge University Press, 1978), pp. 91-93.

2. Richard I. Hofferbert and John K. Urice, "Small-Scale Policy: The Federal Stimulus Versus Competing Explanations for State Funding for the Arts," American Journal of Political Science, Vol. 29, No. 2, pp. 310-311.

3. Netzer, pp. 84-87.

4. For detailed information on the two SPPA surveys see John P. Robinson, Carol A. Keegan, Terry Hanford, and Timothy A. Triplett, Public Participation in the Arts: Final Report on the 1982 Survey (Washington, D.C.: National Endowment for the Arts, Research Division, October 1985); and John P. Robinson, Carol A. Keegan, Marcia Harth, and Timothy A. Triplett, Public Participation in the Arts: Final Report on the 1985 Survey--Volume I: Overall Project Report (Washington, D.C.: National Endowment for the Arts, Research Division, December 1986).

5. Some publications have already come out using these data, most notably Judith R. Blau and Gail A. Quets, "The Geography of Arts Participation: Report on the 1982 and 1985 Surveys of Public Participation in the Arts," Research Monograph prepared for the Research Division, National Endowment for the Arts, March 1987. This monograph deals with a variety of questions concerning the geographic distribution of artistic activity but does not touch on questions of the distribution of public support.

6. For a further discussion of the issues inherent in determining analytical boundaries for the purpose of studying arts funding see J. Mark Davidson Schuster, "Making Compromises to Make Comparisons in Cross-National Arts Policy Research," Journal of Cultural Economics, Vol. 11, No. 2, December 1987, pp. 1-36.

7. National Assembly of State Arts Agencies, Press Release, "State Arts Agency Legislative Appropriations are Highest Increase in Six Years," 30 October 1985, table summarizing the NASAA Annual Survey for fiscal years 1985 and 1986.

8. There has been considerable debate as to whether the National Assembly of State Arts Agencies should endeavor to collect this supplementary information as well. It would give a more complete picture of each state's commitment to the arts, but would perhaps undermine the political bargaining position of the State Arts Agencies in searching for increased appropriations.

9. Office for Public Partnership, National Endowment for the Arts, unpublished tabulation of fiscal '85 grants to states and territories; and National Endowment for the Arts, 1985 Annual Report: 20th Anniversary (Washington, D.C.: National Endowment for the Arts, March 1986).

10. NEA grants to state arts agencies are made up of three components: a fixed block grant plus a variable grant that is a function of the state's population plus any program grants that the state arts agency has received through the normal competitive process. The block grant is fixed by legislative intent and the variable grant is determined by the policy of NEA's Office for Public Partnership. One might net out these two in order to better estimate the discretionary expenditure of NEA across states.

11. Hofferbert and Urice, "Small-Scale Policy," pp. 308-329.

12. U.S. Bureau of the Census, Current Population Reports, series P-25 as reported in Statistical Abstract of the United States: 1987 (Washington, D.C.: U.S. Government Printing Office, 1986), Table 26, "Resident Population, by Age and State: 1985," p. 23.

13. National Assembly of State Arts Agencies, Press Release, "State Arts Agency Legislative Appropriations Highest Increase in Five Years," 27 December 1984, tabulation from NASAA Annual Survey.

14. Hofferbert and Urice approach this question from a slightly different perspective, arguing that certain states spend more highly on a mix of related policy areas than do other states. They therefore use expenditures on these related areas as a measure of "policy norms" for state expenditure and test the extent to which state arts funding parallels these other forms of expenditure. Hofferbert and Urice, pp. 320 and 326. My use of the percentage of total state expenditure on the arts is a measure of extraordinary budget commitment, rather than ordinary budget commitment.

15. Geographic tabulations using the SPPA '82 and SPPA '85 data were prepared by the U.S. Bureau of the Census and are available from the Research Division, National Endowment for the Arts.

16. See, for example, Robinson, et al., Public Participation in the Arts: Final Report on the 1982 Survey, pp. 211-216; or Blau and Quets, "The Geography of Arts Participation," pp. 4-5.

17. This concept is directly analogous to the distinction between visits and visitors. The "number of participations" focuses on how many of the seven key activities the individual respondent attended, not on how often the individual attended.

18. Judith Blau has done the most complete job of compiling these statistics, but her work focuses on the distribution by SMSA, a distribution not applicable to the current monograph. See, for example, Judith R. Blau, "The Elite Arts, More or Less de riguer: A Comparative Analysis of Metropolitan Culture," Social Forces, Vol. 64, No. 4, June 1986, pp. 875-905.

19. American Association of Museums, The Official Museum Directory: 1985 (Wilmette, Illinois: National Register Publishing Co., 1984), pp. A14-A18 and 971-980. For a full discussion of how I determined which museums to include see J. Mark Davidson Schuster, "Perspectives on the American Audience for Art Museums," Research Monograph prepared for the Research Division, National

Endowment for the Arts, July 1987, pp. 99-106.

20. Research Division, National Endowment for the Arts, "Geography of U.S. Performing Arts Organizations in 1982 (Part 1)," Research Division Note #23, 10 June 1987.

21. Research Division, National Endowment for the Arts, Where Artists Live 1980 (New York: Publishing Center for Cultural Resources, March 1987).

22. Paul DiMaggio, Michael Useem, and Paula Brown, Audience Studies of the Performing Arts and Museums: A Critical Review, Research Division Report #9 (Washington, D.C.: Research Division, National Endowment for the Arts, November 1978), pp. 18-21. These findings have been borne out repeatedly in all of the monographs written from the SPPA data. See, for example, J. Mark Davidson Schuster, "Perspectives on the American Audience for Arts Museums."

23. U.S. Bureau of the Census, 1980 Census of Population, "Volume 1: Characteristics of the Population, Chapter C: General Social and Economic Characteristics, Part 1: United States Summary," (Washington, D.C.: U.S. Government Printing Office, December 1983), pp. 309-344.

24. Hofferbert and Urice, "Small Scale Policy," pp. 314 and 326. The data on the age of the state arts agencies are taken from Research Division, National Endowment for the Arts, The State Arts Agencies in 1974: All Present and Accounted For, Research Division Report #8, (Washington, D.C.: Research Division, National Endowment for the Arts, April 1978).

25. Hofferbert and Urice, "Small Scale Policy," pp. 314 and 326.

26. See, for example, National Assembly of State Arts Agencies, Press Release, "State Arts Agency Legislative Appropriations Highest Increase in Five Years," 27 December 1984, tabulation from NASAA Annual Survey.

27. Utah is omitted from this calculation because of the unusual age of its state arts agency. It was founded in 1899, while all of the other states' agencies were founded in the 1960's or later.

28. See, for example, Judith R. Blau, "The Elite Arts, More or Less de riguer."

APPENDIX A: DEPENDENT AND INDEPENDENT VARIABLES FOR ALL FIFTY STATES

DEPENDENT VARIABLES

STATE	ADULT POPULATION	STATE ART AGENCY APPROPRIATION	NEA EXPENDITURE BY STATE	STATE APPROPRIATION PER CAPITA	NEA EXPENDITURE PER CAPITA	STATE APPROPRIATION AS % OF STATE BUDGET
ALABAMA	2,904,000	$1,000,000	$783,450	$0.34	$0.27	0.039%
ALASKA	351,000	$5,294,600	$859,012	$15.08	$2.45	0.147%
ARIZONA	2,312,000	$616,600	$1,146,070	$0.27	$0.50	0.029%
ARKANSAS	1,713,000	$795,998	$548,200	$0.46	$0.32	0.051%
CALIFORNIA	19,525,000	$10,422,000	$14,569,828	$0.53	$0.75	0.041%
COLORADO	2,367,000	$928,655	$1,521,700	$0.39	$0.64	0.052%
CONNECTICUT	2,418,000	$1,121,974	$2,376,315	$0.46	$0.98	0.030%
DELAWARE	465,000	$450,300	$546,950	$0.97	$1.18	0.056%
FLORIDA	8,830,000	$9,045,182	$1,843,550	$1.02	$0.21	0.139%
GEORGIA	4,318,000	$1,719,528	$3,021,430	$0.40	$0.70	0.040%
HAWAII	764,000	$1,591,820	$837,230	$2.08	$1.10	0.107%
IDAHO	681,000	$124,956	$583,320	$0.18	$0.86	0.023%
ILLINOIS	8,436,000	$5,648,300	$4,149,647	$0.67	$0.49	0.063%
INDIANA	3,993,000	$1,450,128	$982,660	$0.36	$0.25	0.049%
IOWA	2,111,000	$492,237	$887,445	$0.23	$0.42	0.023%
KANSAS	1,785,000	$487,534	$738,950	$0.27	$0.41	0.029%
KENTUCKY	2,703,000	$1,536,000	$1,149,735	$0.57	$0.43	0.060%
LOUISIANA	3,126,000	$1,133,361	$1,224,065	$0.36	$0.39	0.028%
MAINE	860,000	$324,758	$897,900	$0.38	$1.04	0.039%
MARYLAND	3,295,000	$1,795,627	$2,186,890	$0.54	$0.66	0.048%
MASSACHUSETTS	4,458,000	$13,602,727	$8,016,199	$3.05	$1.80	0.256%
MICHIGAN	6,605,000	$8,817,400	$2,965,053	$1.33	$0.45	0.161%
MINNESOTA	3,054,000	$2,265,160	$4,928,060	$0.74	$1.61	0.046%
MISSISSIPPI	1,824,000	$436,438	$562,325	$0.24	$0.31	0.032%
MISSOURI	3,702,000	$3,067,071	$3,621,194	$0.83	$0.98	0.119%
MONTANA	592,000	$702,636	$558,975	$1.19	$0.94	0.196%
NEBRASKA	1,158,000	$634,717	$1,024,590	$0.55	$0.88	0.077%
NEVADA	716,000	$123,549	$424,475	$0.17	$0.59	0.029%
NEW HAMPSHIRE	745,000	$129,456	$742,585	$0.17	$1.00	0.035%
NEW JERSEY	5,700,000	$6,216,900	$1,422,395	$1.09	$0.25	0.111%
NEW MEXICO	1,002,000	$700,100	$2,160,014	$0.70	$2.16	0.052%
NEW YORK	13,415,000	$39,087,600	$36,111,429	$2.91	$2.69	0.199%

APPENDIX A (continued)

DEPENDENT VARIABLES

STATE	ADULT POPULATION	STATE ART AGENCY APPROPRIATION	NEA EXPENDITURE BY STATE	STATE APPROPRIATION PER CAPITA	NEA EXPENDITURE PER CAPITA	STATE APPROPRIATION AS % OF STATE BUDGET
NORTH CAROLINA	4,666,000	$2,921,109	$1,813,860	$0.63	$0.39	0.076%
NORTH DAKOTA	488,000	$174,971	$436,550	$0.36	$0.89	0.033%
OHIO	7,871,000	$5,784,562	$3,067,505	$0.73	$0.39	0.066%
OKLAHOMA	2,377,000	$1,596,499	$888,600	$0.67	$0.37	0.095%
OREGON	1,976,000	$456,082	$1,699,385	$0.23	$0.86	0.028%
PENNSYLVANIA	8,976,000	$5,585,000	$5,089,312	$0.62	$0.57	0.066%
RHODE ISLAND	743,000	$419,301	$1,149,715	$0.56	$1.55	0.044%
SOUTH CAROLINA	2,425,000	$1,857,856	$850,120	$0.77	$0.35	0.079%
SOUTH DAKOTA	502,000	$251,028	$507,630	$0.50	$1.01	0.078%
TENNESSEE	3,531,000	$718,900	$1,282,690	$0.20	$0.36	0.032%
TEXAS	11,572,000	$4,239,910	$6,030,997	$0.37	$0.52	0.076%
UTAH	1,031,000	$1,399,900	$995,740	$1.36	$0.97	0.124%
VERMONT	395,000	$225,710	$616,150	$0.57	$1.56	0.063%
VIRGINIA	4,262,000	$1,747,865	$1,540,280	$0.41	$0.36	0.047%
WASHINGTON	3,229,000	$1,746,900	$3,129,095	$0.54	$0.97	0.041%
WEST VIRGINIA	1,420,000	$1,848,734	$448,850	$1.30	$0.32	0.126%
WISCONSIN	3,491,000	$968,000	$1,653,133	$0.28	$0.47	0.021%
WYOMING	349,000	$144,606	$432,480	ERR	$1.24	0.043%

Sources: Population: Statistical Abstract of the United States: 1987, 1985 data.

State Appropriations: National Assembly of State Arts Agencies, Press Releases, 1985 and 1986.

NEA Expenditures: Office for Public Partnership, National Endowment for the Arts, unpublished tabulation of fiscal 1985 grants.

APPENDIX A (continued)

	INDEPENDENT VARIABLES								
STATE	ADULT POPULATION	MEDIAN YEARS EDUC	NONPROFIT PERFORMING ARTS ORGANIZATIONS	ART MUSEUMS	TOTAL ORGANIZATIONS	ORGANIZATIONS PER 100,000 ADULTS	ARTISTS	ARTISTS PER 1,000 ADULTS	AGE OF STATE AGENCY
ALABAMA	2,904,000	12.2	8	15	28	0.96	11,779	4.06	19
ALASKA	351,000	12.8	8	5	13	3.70	2,148	6.12	19
ARIZONA	2,312,000	12.7	18	17	35	1.51	14,023	6.07	19
ARKANSAS	1,713,000	12.2	8	7	15	0.88	5,468	3.19	14
CALIFORNIA	19,525,000	12.7	193	112	305	1.56	176,321	9.03	22
COLORADO	2,367,000	12.8	34	18	52	2.20	17,930	7.57	18
CONNECTICUT	2,418,000	12.6	36	30	66	2.73	17,211	7.12	20
DELAWARE	465,000	12.5	4	7	11	2.37	2,288	4.92	16
FLORIDA	8,830,000	12.5	58	47	105	1.19	48,302	5.47	19
GEORGIA	4,318,000	12.2	27	29	56	1.30	20,330	4.71	21
HAWAII	764,000	12.7	8	7	15	1.96	6,753	8.84	20
IDAHO	681,000	12.6	6	5	11	1.62	3,207	4.71	19
ILLINOIS	8,436,000	12.5	55	38	93	1.10	50,467	5.98	22
INDIANA	3,993,000	12.4	28	27	55	1.38	17,439	4.37	20
IOWA	2,111,000	12.5	20	21	41	1.94	9,395	4.45	18
KANSAS	1,785,000	12.6	10	19	29	1.62	9,377	5.25	19
KENTUCKY	2,703,000	12.1	25	16	41	1.52	10,446	3.86	19
LOUISIANA	3,126,000	12.2	21	15	36	1.15	12,825	4.10	20
MAINE	860,000	12.5	15	21	36	4.19	3,790	4.41	19
MARYLAND	3,295,000	12.5	23	16	39	1.18	20,990	6.37	19
MASSACHUSETTS	4,458,000	12.6	55	61	116	2.60	32,223	7.23	19
MICHIGAN	6,605,000	12.5	45	33	78	1.18	36,888	5.58	19
MINNESOTA	3,054,000	12.6	45	18	63	2.06	19,512	6.39	24
MISSISSIPPI	1,824,000	12.2	10	12	22	1.21	6,155	3.37	17
MISSOURI	3,702,000	12.4	29	13	42	1.13	18,951	5.12	23
MONTANA	592,000	12.6	8	13	21	3.55	2,966	5.01	18
NEBRASKA	1,158,000	12.6	15	10	25	2.16	5,666	4.89	20
NEVADA	716,000	12.6	4	4	8	1.12	6,507	9.09	18
NEW HAMPSHIRE	745,000	12.6	14	13	27	3.62	3,751	5.03	20
NEW JERSEY	5,700,000	12.5	29	21	50	0.88	36,510	6.41	19
NEW MEXICO	1,002,000	12.6	12	21	33	3.29	6,505	6.49	20
NEW YORK	13,415,000	12.5	230	137	367	2.74	138,424	10.32	25

APPENDIX A (continued)

STATE	ADULT POPULATION	INDEPENDENT VARIABLES: MEDIAN YEARS EDUC	NONPROFIT PERFORMING ARTS ORGANIZATIONS	ART MUSEUMS	TOTAL ORGANIZATIONS	ORGANIZATIONS PER 100,000 ADULTS	ARTISTS	ARTISTS PER 1,000 ADULTS	AGE OF STATE AGENCY
NORTH CAROLINA	4,666,000	12.2	35	42	77	1.65	20,561	4.41	21
NORTH DAKOTA	488,000	12.5	5	2	7	1.43	1,972	4.04	18
OHIO	7,871,000	12.4	67	53	120	1.52	39,768	5.05	20
OKLAHOMA	2,377,000	12.5	15	14	29	1.22	10,308	4.34	20
OREGON	1,976,000	12.7	25	12	37	1.87	13,157	6.66	18
PENNSYLVANIA	8,976,000	12.4	80	53	133	1.48	43,363	4.83	19
RHODE ISLAND	743,000	12.3	8	7	15	2.02	4,527	6.09	18
SOUTH CAROLINA	2,425,000	12.1	17	28	45	1.86	9,526	3.93	18
SOUTH DAKOTA	502,000	12.5	6	13	19	3.78	1,974	3.93	18
TENNESSEE	3,531,000	12.2	33	22	55	1.56	17,714	5.02	20
TEXAS	11,572,000	12.4	70	56	126	1.09	61,802	5.34	20
UTAH	1,031,000	12.8	10	9	19	1.84	5,858	5.68	86
VERMONT	395,000	12.6	7	16	23	5.82	2,366	5.99	20
VIRGINIA	4,262,000	12.4	26	24	50	1.17	24,775	5.81	17
WASHINGTON	3,229,000	12.7	39	18	57	1.77	22,974	7.11	20
WEST VIRGINIA	1,420,000	12.2	9	5	14	0.99	4,223	2.97	18
WISCONSIN	3,491,000	12.5	37	34	71	2.03	18,429	5.28	12
WYOMING	349,000	12.7	1	11	12	3.44	1,602	4.59	18

Sources: Education: 1980 Census of Population, "General Social and Economic Characteristics."

Arts Organizations: Research Division, NEA, "Geography of U.S. Performing Arts Organizations in 1982;" and American Association of Museums, The Official Museum Directory: 1985, 1984 data.

Artists: Research Division, NEA, Where Artists Live: 1980.

State Arts Agency Age: Research Division, NEA, The State Arts Agencies in 1974.

APPENDIX B: PARTICIPATION RATES AND INDICES—FOURTEEN MOST POPULOUS STATES

	PARTICIPATION RATES							PARTICIPATION INDICES		
	JAZZ	CLASSICAL MUSIC	OPERA	MUSICAL PLAY	DRAMA	BALLET	ART MUSEUM	OVERALL INDEX	ELITE INDEX	KEYFOUR INDEX
CALIFORNIA	12.1%	14.7%	3.3%	22.4%	14.4%	5.1%	31.9%	11	22.8	83.4
FLORIDA	7.1%	9.3%	2.2%	14.6%	8.8%	2.0%	19.4%	63.4	13	52.1
GEORGIA	10.4%	8.3%	0.6%	10.2%	7.2%	3.4%	17.8%	57.9	11.2	43.5
ILLINOIS	8.4%	14.1%	2.2%	20.3%	15.0%	3.9%	22.3%	86.2	21.1	71.7
INDIANA	9.9%	15.8%	4.4%	20.0%	10.8%	5.9%	24.1%	90.9	21.1	70.7
MASSACHUSETTS	9.1%	17.8%	4.4%	22.3%	17.8%	9.2%	26.6%	107.2	31.4	84.5
MICHIGAN	14.9%	13.0%	1.8%	14.7%	10.0%	3.9%	20.9%	79.2	15.7	58.6
NEW JERSEY	5.7%	7.2%	2.7%	19.3%	15.0%	4.1%	17.6%	71.6	21.8	59.1
NEW YORK	8.7%	12.2%	4.7%	20.7%	13.7%	5.3%	21.5%	86.8	23.7	68.1
NORTH CAROLINA	7.5%	11.5%	2.7%	11.4%	10.5%	3.6%	13.3%	60.5	16.8	46.7
OHIO	7.5%	10.8%	1.1%	13.4%	8.4%	4.7%	13.4%	59.3	14.2	46
PENNSYLVANIA	7.7%	12.1%	2.0%	15.6%	10.2%	3.9%	14.6%	66.1	16.1	52.5
TEXAS	11.2%	13.5%	2.3%	13.7%	10.3%	6.3%	26.2%	83.5	18.9	63.7
VIRGINIA	12.8%	13.9%	3.4%	21.6%	12.8%	5.9%	30.9%	101.3	22.1	79.2

Note: The overall index is the sum of the seven participation rates. For a discussion of the elite and keyfour indices see text.

Source: Geographic cross-tabulations prepared by the U.S. Bureau of the Census from the Survey of Public Participation in the Arts, 1985.

APPENDIX C: SUBREGION COMPOSITION AND PARTICIPATION RATES

SUBREGION	STATES	PARTICIPATION RATES							OVERALL INDEX
		JAZZ	CLASSICAL MUSIC	OPERA	MUSICAL PLAY	DRAMA	BALLET	ART MUSEUM	
NEW ENGLAND	ME, NH, VT, MA, RI, CT	9.6%	18.4%	3.8%	22.5%	16.9%	6.1%	24.7%	102.0
MID ATLANTIC	NY, NJ, PA	7.8%	11.2%	3.5%	18.8%	12.9%	4.6%	18.5%	77.3
EAST NORTH CENTRAL	OH, IN, IL, MI, WI	10.4%	13.6%	2.0%	16.6%	11.3%	4.5%	20.4%	78.8
WEST NORTH CENTRAL	MN, IA, MO ND, SD, NE, KS	10.9%	17.4%	2.0%	19.6%	14.3%	3.5%	22.3%	90.0
SOUTH ATLANTIC	DE, MD, DC, VA, NC, SC, GA, FL	9.2%	10.7%	2.2%	14.6%	9.8%	3.2%	19.3%	69.0
EAST SOUTH CENTRAL	KY, TN, AL, MS	4.9%	6.6%	1.2%	7.5%	5.2%	2.1%	10.4%	37.9
WEST SOUTH CENTRAL	AR, LA, OF, TX	9.0%	10.5%	2.1%	12.8%	9.2%	4.6%	23.1%	71.3
MOUNTAIN	MT, ID, WY, CO, NM, AZ, UT, NV	8.4%	14.3%	3.0%	12.2%	9.7%	2.9%	28.3%	78.8
PACIFIC	WA, OR, CA, AK, HA	12.5%	15.0%	3.5%	20.8%	14.3%	5.8%	31.7%	103.6

Note: The overall index is the sum of the seven participation rates.

Source: Geographic cross-tabulations prepared by the U.S. Bureau of the Census from the Survey of Public Participation in the Arts, 1985.